

Flip-top packet for cigarettes

Description

5 The invention relates to a hinge-lid box for a cigarette group wrapped in an inner blank - cigarette block - or other (block-form) articles, comprising a box part and lid which are connected to one another by a transversely directed linear articulation in the  
10 region of a box rear wall, on the one hand, and of a lid rear wall, on the other hand, the box part comprising a box front wall, box rear wall, box side walls and base wall, and the lid comprising a lid front wall, lid rear wall, lid side walls and end wall.

15 Hinge-lid boxes are the main type of packaging used for cigarettes, but also for other articles. The standard hinge-lid box is of cuboidal design with cross-sectionally right-angled, upright and transversely  
20 directed pack edges. The dimensions of the pack are coordinated with the dimensions of the pack contents, in particular of the cigarette block.

25 The object of the invention is for the configuration of such hinge-lid boxes to be developed further and improved such that, while maintaining the basic structure of a hinge-lid box, a pleasing appearance is provided, on the one hand, and, on the other hand, it is made possible for inserts to be accommodated  
30 expediently in the pack.

In order to achieve this object, the hinge-lid box according to the invention is characterized in that formed above and/or beneath the pack contents, in  
35 particular the cigarette block, is a cavity or a chamber which is bounded at least by the end wall and lid front wall and lid rear wall and/or at least by the base wall and box front wall and box rear wall.

Accordingly, in order to form the chamber or the free space in the case of the hinge-lid box according to the invention, the box front wall and box rear wall are 5 extended beyond the pack contents, that is to say beyond the cigarette block, in the base region and/or the lid front wall and the lid rear wall are extended beyond the same in the end region.

10 One special feature is that the end wall and/or base wall are formed wholly or partially from folding tabs of side walls, namely end tabs which, in particular as a continuation of inner side tabs, form sub-regions of the end wall or base wall and/or a boundary of the 15 chamber.

One particular configuration of the hinge-lid box consists in the base wall and/or end wall being designed with an essentially arcuate or polygonal 20 contour, the arcuate or polygonal configuration extending from one side wall or collar side wall to the other, in particular symmetrically in relation to an imaginary central vertical plane of the pack. A particularly advantageous configuration is one in which 25 the end wall and/or base wall comprises three wall regions, namely two lateral, arcuate or oblique wall regions and a central, planar or transversely directed wall region. Arcuate wall regions are preferably of elliptical design, that is to say with relatively 30 pronounced rounding in a region which is directed toward the side walls and a flatter transition into the central wall regions.

The cuboidal pack contents are, in particular the 35 cigarette block is, located outside the region of the shape base wall and/or end wall, with the result that the cavity or the free chamber is formed within the pack in the region of the base wall and/or end wall. Said chamber serves for accommodating pack inserts,

e.g. printing carriers or coupons, but also useful articles.

Further special features of the invention are explained 5 in more detail hereinbelow, with reference to exemplary embodiments. In the drawings:

Figure 1 shows a perspective illustration of a hinge-lid box for cigarettes with the lid open,  
10 Figure 2 shows the pack according to Figure 1 in the closed position,  
Figure 3 shows the hinge-lid box according to Figure 2 in a vertical section along section plane III-III,  
15 Figure 4 shows a front view of the hinge-lid box according to Figure 2,  
Figure 5 shows a spread-out blank for producing a hinge-lid box according to Figures 1 to 4,  
20 Figure 6 shows a diagram for illustrating the geometrical shape of an end wall of the pack,  
Figure 7 shows another embodiment of a hinge-lid box, in a vertical section corresponding to figure 3,  
25 Figure 8 shows a further embodiment of the pack, in a vertical section analogous to Figure 7,  
Figure 9 shows a perspective front view of the hinge-lid box according to Figure 8,  
Figure 10 shows a spread-out blank for a hinge-lid box according to Figures 8 and 9,  
30 Figure 11 shows a further embodiment of the hinge-lid box, in the vertical section analogous to Figure 8,  
Figure 12 shows a perspective front view of the hinge-lid box according to Figure 11,  
35 Figure 13 shows a spread-out blank for a hinge-lid box according to Figures 11 and 12,  
Figure 14 shows a further embodiment of the hinge-lid box in the vertical section analogous to Figure 11,

Figure 15 shows a perspective front view of the hinge-lid box according to Figure 14, and Figure 16 shows a spread out-blank for a hinge-lid box according to Figures 14 and 15.

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The packs shown are hinge-lid boxes for cigarettes. This type of pack comprises a (bottom) box part 10, a (top) lid 11 and a collar 12 formed from a separate blank. The pack contents are formed by a cuboidal 10 article, namely a cigarette block 13, that is to say a formed group of cigarettes with a wrapper made of paper or tin foil.

The box part 10 is formed by a box front wall 14, a box 15 rear wall 15 located opposite, narrow, upright box side walls 16 and a base wall 17. Correspondingly, the lid 11 comprises a lid front wall 18, lid rear wall 19, lid side walls 20 and an end wall 21. The box part 10 and lid 11 are connected to one another in a pivotable 20 manner in the rear region of the hinge-lid box by a transversely directed linear articulation 22.

The collar 12 comprises a collar front wall 23 and collar side walls 24. The collar 12 is fixed in the box 25 part 10, that is to say it is adhesively bonded to the box front wall 14 and/or box side walls 16. A top sub-region of the collar 12 projects out of the box part 10, to be precise (approximately) corresponding to the height of the cigarette block 13.

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The base wall 17 and/or end wall 21 are designed in a particular manner. In the case of the exemplary embodiment of Figures 1 to 5, the base wall 17 and end wall 21 are of identical configuration, with the result 35 that the hinge-lid box - in relation to an imaginary transversely directed centre plane - has a symmetrical contour.

The base wall 17 and, correspondingly, the end wall 21 are of essentially arcuate configuration in the case of this exemplary embodiment. The special feature consists in lateral regions of the base wall 17 and/or end wall 21, that is to say those regions which are directed towards the side walls 16, 20 of the hinge-lid box, being of arcuate configuration, that is to say forming an arcuate wall region, namely side section 25. These regions merge laterally into the upright side walls of the pack. In the central region of the base wall 17 and/or end wall 21, the side sections 25 merge into a planar, transversely or horizontally directed central region 26.

15 The base wall 17 and end wall 21 predominantly comprise correspondingly shaped folding tabs which are connected to the side walls, namely to the box side walls 16 and to the lid side walls 20, respectively. This involves end tabs 27, 28 which are designed as a continuation of inner box side tabs 29 and lid side tabs 30. The side tabs 29, 30 are part of the double-layered box side walls 16 and lid side walls 20. Outer box side tabs 31 and lid side tabs 32 extend merely in the region of the box side walls 16 and lid side walls 20, respectively, 25 with the result that the relevant side walls 16, 20 have an outer transverse edge 33, 34 as top and bottom termination.

30 The end tabs 27, 28 extend into the planar central section 26 of the end wall 21 and base wall 17. One special feature is formed by the configuration shown, in which the two side sections 25 belonging to the end wall 21 and base wall 17 butt against one another by way of transversely directed peripheral edges, in 35 particular in the vertical, central pack plane. Accordingly, one end region of the side sections 25 is oriented in a horizontal and planar manner.

Furthermore, a covering is provided on the outside in the region of the central section 26, preferably over the entire width of this planar region, the covering connecting the mutually facing (end) regions of the 5 side sections 25 to one another. This involves a cross piece 35 which extends transversely over the end wall 21 and base wall 17. The crosspiece 35 is designed as a connection between the lid front wall 18 and lid rear wall 19 (end wall 21) and as a connection between the 10 box front wall 14 and box rear wall 15 (base wall (17) (Figure 5). The abutting side sections 25 are connected, in particular adhesively bonded, to the inside of the crosspiece 35.

15 The blank (Figure 5) is designed in a particular manner. A centrepiece 36 comprises the box rear wall 15, lid rear wall 19 and the inner side tabs 29, 30 connected thereto. The end tabs 27, 28 run in extension of the side tabs. The centrepiece 36 is adjoined, via 20 the crosspiece 35, by end pieces 37, 38 in each case with a box front wall 14 and box side tabs 31, on the one hand, and lid front wall 18 with lid side tabs 32, on the other hand. Also arranged on the end piece 38 is a lid inner tab 39 which can be folded over against the 25 inside of lid front wall 18.

The shaping of the end tabs 27, 28 in order to form the arcuate side sections 25 can be done without any special tools, by virtue of the end tabs 27, 28 being 30 prepared correspondingly. These end tabs are provided with transversely directed scores 40, which are made on the spread-out blank by stamping. The scores 40 are at different spacings from one another corresponding to the course taken by the arcuate contour, that is to say 35 the spacings are smaller in the region of a relatively pronounced curvature. The crosspieces 35 are also provided with scores 41 in order to provide an end wall 21 and base wall 17 which have a uniformly structured appearance on the outside.

In order to provide a dimensionally stable hinge-lid box, the end tabs 27, 28 are supported, at least in the region of the arcuate side sections 25, on free edges 5 of the box front wall 14 and box rear wall 15, designed with a corresponding arcuate contour 41, on the one hand and on the lid front wall ensures flush rest and support on the arcuate contours 41. The dimensions are selected such that the box side tabs 29 and lid side 10 tabs 30 are of a width which is (slightly) smaller than the width of the side walls of the pack, while the transverse dimension of the broadenings 42 corresponds (approximately) to the width of the pack and/or of the pack side walls.

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One special feature is formed by the shape of the contours 41. This involves elliptical sections 43 (Figure 6) and a rectilinear intermediate section 44 in each case. The top boundary (peripheral edge) of the 20 end wall 21 (or base wall 17) thus comprises two elliptical sections 43 with the horizontal intermediate section 44 in between corresponding to the central section 26.

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The dimensions of the sections 43, 44 are coordinated with one another, to be precise in accordance with axes of the elliptical sections 43, namely a major axis  $a$  and a minor axis  $b$ , on the one hand, and the overall width  $B$  of the hinge-lid box, where:

30

$$0.2 \times B \leq a \leq 0.4 \times B$$

It is also the case that:

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$$0.2 \times (B/2 - a) < b < 3 \times (B/2 - a)$$

The width of the intermediate section 44, corresponding to central section 26, can be taken from the relationships  $B - 2a$ .

A further special feature of the pack is that a (top) lid closure edge 45 is spaced apart from a bottom box closure edge 46. This produces a transversely directed, 5 strip-like opening 47, in the region of which the A further special feature of the pack is that a (top) lid closure edge 45 is spaced apart from a bottom box closure edge 46. This produces a transversely directed, strip-like opening 47, in the region of which the 10 collar front wall 23 is visible. The closure edges 45, 46 run parallel to one another and are directed transversely to the longitudinal extent of the hinge-lid box.

15 One particular hinge-lid box is shown in Figure 7. This is designed in the above described manner in the top region, namely in respect of the lid 11, that is to say with an end wall 21 of arcuate configuration. In the bottom region, the hinge-lid box is of conventional 20 design, that is to say with a horizontally or transversely directed, planar base wall 48. Likewise conventional base corner tabs 49 butt against the inside of the same. These are connected to the inner box side tabs 29.

25 The box contents are, namely the cigarette block 13 is, arranged within the above described hinge-lid box such that, with a base wall 17 and/or end wall 21 of arcuate configuration, the cigarette block 13 remains outside 30 this shaped region. A cavity or a chamber 50, 51 is thus produced above and beneath the cigarette block. This chamber is bounded in the upward and downward directions, on the one hand, by the end wall 21, which is configured in a particular manner, and base wall 17 35 and, on the other hand, by the cigarette block 13 and is bounded laterally by the correspondingly extended and shaped box front wall 14 and box rear wall 15 and lid front wall 18 and lid rear wall 19. This cavity or the chamber 50, 51 is suitable for accommodating

inserts for the hinge-lid box, e.g. advertising, descriptive printing carriers or coupons. It is also possible, however, to accommodate useful articles in one chamber 50, 51 and/or the other. In the case of the 5 embodiment of Figure 7, the cigarette block 13 rests directly on the base wall 48 or the base corner tabs 49.

One particular configuration of the hinge-lid box is 10 shown in Figures 8 to 10. The end wall 21 comprises exclusively planar wall regions adjoining one another in a polygonal manner. The two side sections 25 are directed obliquely in the manner of a roof. These side sections 25, which are designed as legs, enclose an 15 obtuse angle in each case in relation to the upright side walls 16, 20 on the one hand, and in relation to the horizontal central section 26, on the other hand. As can be seen from Figure 10, the side section 25 is 20 delimited by transversely directed folding lines 53 from the side walls and/or the inner side tab 30, on the one hand, and from a horizontally directed end leg 52. It is also the case with this pack that the side 25 sections 25 and the end legs 52 are designed as a continuation of the lid side tab 30. Furthermore, a crosspiece 35 is provided as an outer covering in the 30 region of the central section 26. This crosspiece is designed to have a greater width in the exemplary embodiment according to Figures 8 to 10 than in the preceding exemplary embodiments.

30 The lid front wall 18 and lid rear wall 19, which are extended beyond the pack contents (cigarette block 13), are designed with a trapezoidal or polygonal contour 41 in the projecting region. The end tabs 27, 28 or the 35 side section 25 thereof, are supported by way of the broadening 42 on the free edges formed by the contour 41. This produces a chamber 50 which is of roof-like or trapezoidal configuration, to be precise symmetrically in relation to a central vertical plane of the hinge-

lid box. It is also possible for this exemplary embodiment to be designed in the same way on the base side as on the end side (in a manner analogous to Figures 1 and 2). Furthermore, the blank according to 5 Figure 10 is designed, in the region of the base wall 48, in a manner corresponding to the exemplary embodiment of Figure 7.

In the case of the hinge-lid box according to Figures 10 11 to 13, a chamber 50 which is produced from extension of the side walls in the (upright) plane of the same, namely of the box side wall 16 and of the lid side walls 20, beyond the pack contents, is provided (above) the cigarette block 13. The projecting portions of the 15 side walls 16, 20 are of different lengths, with the result that the chamber 50 is trapezoidal or triangular (in vertical section). In the case of the examples shown, both layers of the side walls 16, 20 are extended into the region of the chamber 50, that is to 20 say the outer (lid) side tab 30 as well as the outer (lid) side tab 32. The side walls 16, 20 extend up to top peripheral edges 54, 55. End tabs 27, 28 connected to the inner side tabs 30 are deflected into the plane of the end wall 21 at an acute angle and at an obtuse 25 angle, respectively. This end wall is formed by a folding tab running over the entire extent of the hinge-lid box (Figure 13). The end tabs 27, 28 are of different designs, that is to say the end tab 27 is rectangular and the end tab 28 is trapezoidal, on 30 account of the oblique positioning of part of the lid 11 and/or of the folding tabs of the same.

On account of the configuration of the chamber 50, the lid front wall 18 and lid rear wall 19 are of 35 trapezoidal design (Figure 13). The lid rear wall 19 is delimited from the (rectangular) end wall 21 by an obliquely directed folding line 56. The adjoining wall regions and folding tabs of the blank are thus directed obliquely in relation to the longitudinal extent of the

same (Figure 13). By virtue of the lid front wall 18 and lid rear wall 19 being dimensioned correspondingly, the hinge-lid box may be designed such that - in the case of a triangular configuration of the chamber 50 -

5 the end wall 21 ends directly at the top boundary of the cigarette block 13, that is to say the peripheral edge 55 is located approximately flush with the cigarette block 13. Furthermore, it is also possible for this configuration of the hinge-lid box to have a

10 chamber in the base region.

The obliquely directed position of the folding line 56, on the one hand, and of the folding line for the lid closure edge 45 within the spread-out blank ensure

15 that, when the hinge-lid box is in the finished state, the lid closure edge 45 is directed precisely transversely to the upright pack edges and thus parallel to the box closure edge 46.

20 In the case of the hinge-lid box according to Figures 14, 15 and 16, the region of the end side of the lid 11 (or of the base) is designed in a particular manner. The end tabs 27, 28 of the inner lid side tabs 30, these end tabs being extended beyond the pack contents,

25 are folded to form an acute angle, this resulting in the formation of downwardly directed side sections 25 as part of the end wall 21. End legs 52 of the end tabs 27, 28 are folded into a position transverse to the longitudinal extent of the pack and/or transverse to

30 the cigarette block 13 and are connected on the inside to a crosspiece 35. The latter forms the central section 26. The end legs 52 are connected to facing peripheral regions of the crosspiece 35 on the inside by adhesive bonding or the like. The resulting central

35 section 26 may butt against the cigarette block 13 at the top or be spaced apart therefrom. This provides the particular configuration of the chamber 50, which is formed above the cigarette block 13 and comprises, if

appropriate, two cross-sectionally triangular sub-chambers.

5 In the case of this exemplary embodiment, the crosspiece 35 is designed to have a greater width, and extends more or less over the entire width of the end wall 21 (Figure 16). The end tabs 27, 28, following the inner lid side tabs 30, butt against the outer lid side tabs 31 and are separated merely by a punch cut 57. It

10 is also the case with this exemplary embodiment that the contours 41 of the lid front wall 18 and lid rear wall 18 are adapted to the respective shape of the end wall 21.

15 The end region and the base region may be of identical design in all the configurations of the hinge-lid box. Advantageous configurations, however, are ones in which a chamber is provided merely in the region of the lid. Furthermore, the hinge-lid boxes may be designed, as

20 shown, with the front opening 47 or, as an alternative, such that the lid closure edge 45 and box closure edge 46 lie against one another when the lid is closed.

List of Designations

- 10 Box part
- 11 Lid
- 12 Collar
- 13 Cigarette block
- 14 Box front wall
- 15 Box rear wall
- 16 Box side wall
- 17 Base wall
- 18 Lid front wall
- 19 Lid rear wall
- 20 Lid side wall
- 21 End wall
- 22 Linear articulation
- 23 Collar front wall
- 24 Collar side wall
- 25 Side section
- 26 Central section
- 27 End tab
- 28 End tab
- 29 Box side tab
- 30 Lid side tab
- 31 Box side tab
- 32 Lid side tab
- 33 Transverse edge
- 34 Transverse edge
- 35 Crosspiece
- 36 Centrepiece
- 37 End piece
- 38 End piece
- 39 Lid inner tab
- 40 Score
- 41 Contour
- 42 Broadening
- 43 Elliptical section
- 44 Intermediate section
- 45 Lid closure edge

46 Box closure edge  
47 Opening  
48 Base wall  
49 Base corner tab  
50 Chamber  
51 Chamber  
52 End leg  
53 Folding line  
54 Peripheral edge  
55 Peripheral edge  
56 Folding line  
57 Punch cup

a Major axis  
b Minor axis  
B Overall width